About KACISE

KACISE (Xian Kacise Optronics Tech Co., Ltd.) has in the line of level measurement since 2013.

Through personalized attention and superior responsiveness, KACISE takes pride in being a company our customers like to do business with.

We gain trust by providing customers both highest quality products and service. Till now, we've helped 500+ Refinery, Fine Chemical, Petrochemical Corps. of SINOPEC in China, more than a dozen global clients in factory construction, renovation, Instrument Renew Projects, resulting in cost-saving, safety assessment approved.

Core competence/products

* Self-developed Non-invasive sensing technique.

- KUM2601 Non-Invasive Level Sensor
- KUM2602 Portable Non-Invasive Level Sensor
- KUM2603 Non-Invasive Level Switch

* Self-developed Level Measurement Solution.

- KLD800series 80Ghz Radar Level Sensor
- KUM series Ultrasonic Level Sensor

Industry Application

Oil & Gas

We have rich experience in petroleum industry. The non-invasive solution realized external measurement which avoiding opening tank, drilling hole,etc, safe and efficient.

Chemical

The types of liquids in the chemical industry are variable. Some with strong corrosion, toxicity, vaporization, flammability will cause trouble for traditional sensor, as well as plant safety issue. By applying KACISE non-invasive Level measurement solution could solve them both.

Food & Beverage

Both contact and non-contact measurement solution would inevitably cause contamination for liquid in tank. KACISE products has been chosen in food, beverage application, Exp: milk, beer.

Non-Invasive Level Measurement Solution

Whether your tank management application is best served by Radar, Servo or Ultrasonic, KACISE offers an advanced application level measurement solutions

- **Non-invasive Sensing Technique**

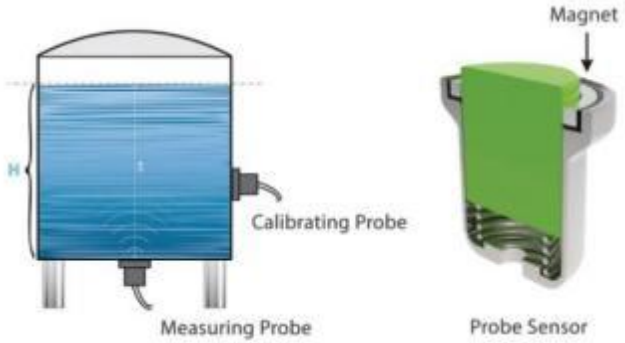
KACISE ultrasonic level Sensor, a non-invasive reliable and accurate tank measurement solution.

Sensor (Continuous / Point)

Advantages

- External Mounted
- No tank break in
- Non-drilling; No flange
- No downtime during installation
- No moving parts
- No maintenance
- 100% safe for toxic, flammable media

Working Principle



$$H = v \times \left(\frac{t}{2} - \frac{t_g}{2}\right) \times \alpha$$

When the magnetic probe is bonded to the bottom shell of the tank, an ultrasonic sound wave travels through the tank and reflects back from the media surface.

The system calculates the height of the liquid, from the time taken for the signal to be received.

Probe Sensor

Best-suited Applications

Plant - Storage Tank; Skid Package

Fleet - PortaPak; Transport Trailer; Bobtails

Flammable Liquid:

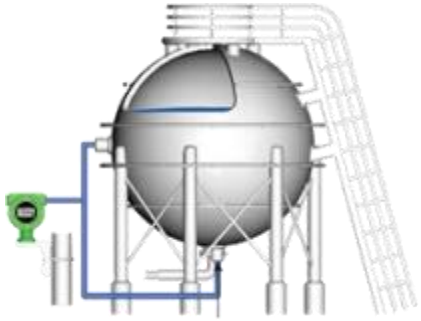
Propane/LPG; Gasoline; Diesel; Jet fuel

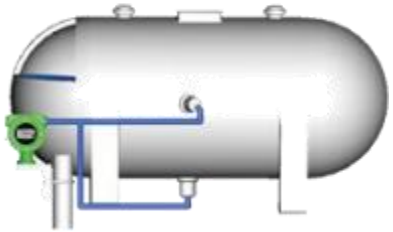
Vaporized Liquid:

Ammonia/NH_3; Chlorine; Propylene; Toluene

Dangerous Liquid:

HNO_3, H_2SO_4(98%), Fluohydric Acid





KUM2601 Non-Invasive Level Sensor (Continuous) - FLAGSHIP

This non-invasive level Sensor is ideal for Storage Tank Monitoring /Instrument Renovation Projects.

Designed for various **Flammable**, **Explosive**, **Toxic liquid** medium, including, but not limited to LPG, solvents, acids, fuels.

KEY Points:

- High and Stable Accuracy
- Best one for special condition: Exp: tank without port to install gauge.

Other Benefits:

- No tank break in; Non-drilling; No flange
- No downtime during installation
- No moving part, No maintenance
- 100% safe, no leakage risk
- Operated by a remote control, No PC, No Oscilloscope
- Local display + Remote(4-20mA/RS-485)

Typical Application: LPG Tank

Specifications

Max Measuring Range	30 m (100ft)
Measuring Error	±1%FS
Transfer Volume	±100m
Frequency Range	20k-400k
Signal Output	Two-wire 4-20mA, MAX 500Ω
Communication	RS-485, IR
Environment Temp	-20℃~+70℃,-40℃~+70℃
Probe Sensor Max Temp	85℃
Ambient Humidity	(0~100%)RH
Explosion-proof	Exd II CT6
Enclosure Protection	IP67
Power Supply	DC 24V
Cable length, from sensor to Sensor	5m, 10m, 15m,20m,25m,30m
Weight of Sensor	2.5KG
Dimension	217mm(L)*160mm(W)*185mm(H)

KUM2602 Non-Invasive Level Sensor (Handy)

This Portable level Sensor is specially designed for Tanker Truck, Trailer, Plant work around check.
When the truck stop, the level gradually be stable, Bond the magnetic sensor to the bottom shell of the tanker, Real-Time Level display.

KEY Points:

Portable, easy to carry for walk around check.
USB charging, support 12h continuous work.

Other Benefits:

- No coupling agent required
- No moving part
- No tank break in
- Real time display
- 100% safe to operate
- No impact on the process

Typical Application: LPG/Fuel Tanker Truck

Specifications

Max Measuring Range	5m
Blind Spot	30mm for Ideal working condition
Max Tank/Vessel Wall Thickness	25mm
Liquid Viscosity Requirement	<10 mPa.S
Repeatable Measurement Error	±10mm
Ambient Temperature for Display	-20℃ ~ +70℃ (-4℉ ~ 158℉)
Ambient Temperature for Probe	-45℃ ~ +80℃ (-49℉ ~ 176℉)
Environment Humidity	(0%～95%)RH
Display Resolution	128×64
Power Supply	3.7v Lithium Battery
Charge	USB
Operating Hours	>12h
Cable Length	1.5m

KUM2603 Non-Invasive Level Switch (Point)

Non-Invasive Level Switch realize the upper and lower limit alarm.

KEY Points:

Alarm position - At any place required. Not limited by fixed hole on side wall.
Non-contact with the Liquid inside, never affected by (exp: thick oil deposits).
No shutdown/empty tank during installation.

Other Benefits:

- No tank break in; Non-side drilling; No flange.
- 100% safe, no leakage risk.
- High/Low Position alarm.
- Local Alarm & Display/Relay output to PLC

Typical Application: Fuel/Oil Tank

Specification

Power	DC 24V
Signal Output	Relay Output (Passive node)
Relay capacity	(DC 30V 6A) (AC 250V 6A)
Repeatability error	±5mm
Container Wall Thickness	Max 60mm
Measurable medium	Pure, emulsion, suspension liquid
Ambient temperature	-20℃~+70℃
Ambient humidity	(0%~95%) RH
Rated Power	3W
Sensor Material	Cast Aluminum
Protection Rating	IP67
Electrical Connector	M20 X 1.5
Hazardous Area Approval	ExdIICT6
Weight	2 KG
Dimension	158mm(L)*122mm(W)*148mm(H)

KUM2604 Conservator Tank Level Meter

Current level measurement for transformer oil conservator tank mostly relies on manual visual inspection, which leads to poor reliability.

A non-contact online oil level meter is necessary to solve this problem. The sensor is clamped to the outer wall of the conservator tank bottom by a magnet and measures the oil level using the sonar principle.

The output signal is transmitted to the power station acquisition system to realize real-time monitoring of the oil level in the tank, reliable and easy to operate.

KEY Points:

Non-invasive level measurement

Transformer Oil Level in Conservator Tank

Split type design with extension rods

Real-time measuring and display

Specialized for electric power plant

Why Choose Sonar Solution?

- Transformer oil is pure (no impurities, precipitation, etc.), with good acoustic performance, the signal in the propagation process attenuation is small, so the receiving circuit is without too much gain.

- The oil level inside the conservator tank is relatively stationary, the oil-gas interface has good reflection performance on the transmitting wave, the echo amplitude is strong, and the time is stable, so the oil level measurement is very reliable.

Global Clients - **Installation+Debug are completely finished on customers own, Pretty easy to handle.**

Mexico, Petroleum/LPG Gas Station

Brazil

Brazil, Oil Tank & Trailer

Ship Application: Ethane and Ethylene tanks.

In Kuwait, WFI(Water for Injection) tank

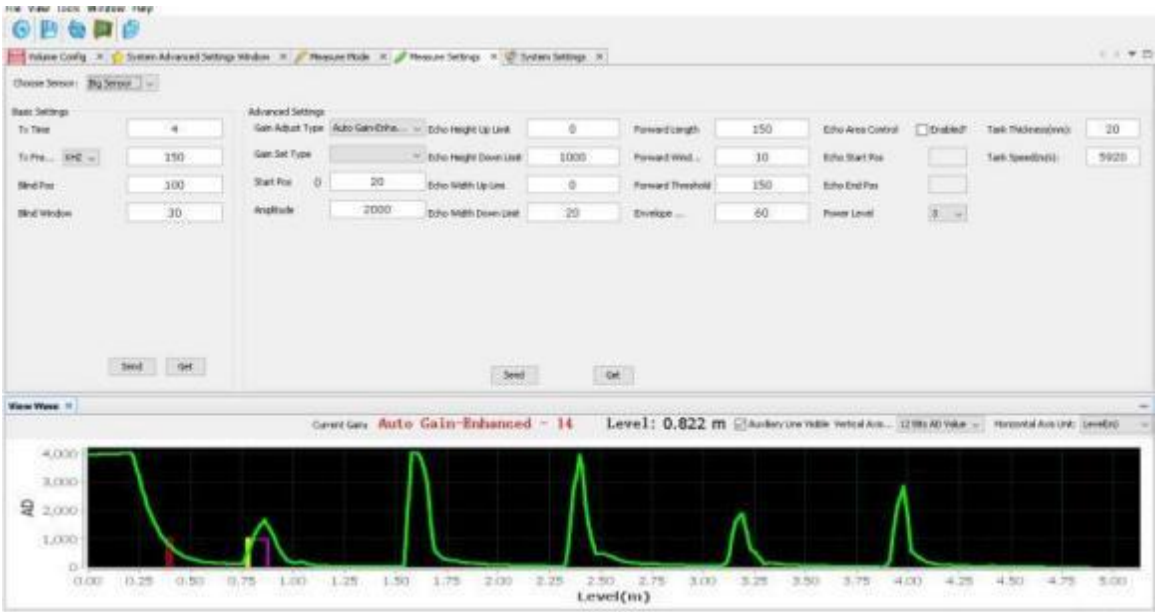
In Kuwait, HFO (Hydrofluoroolefin) tank

In Colombia, LPG horizontal tank

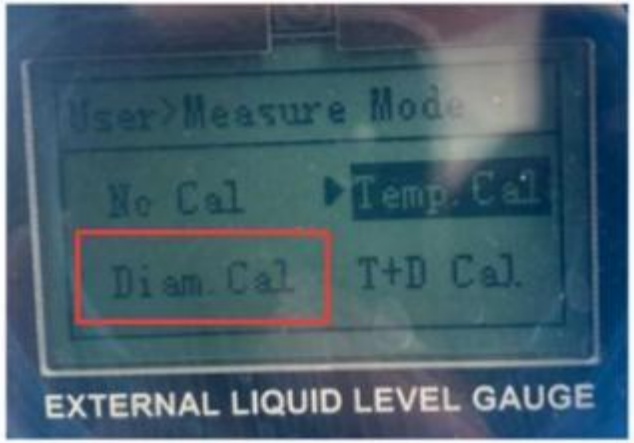
In China, LPG spherical tank/Skid package

In Indonesia, LPG tank

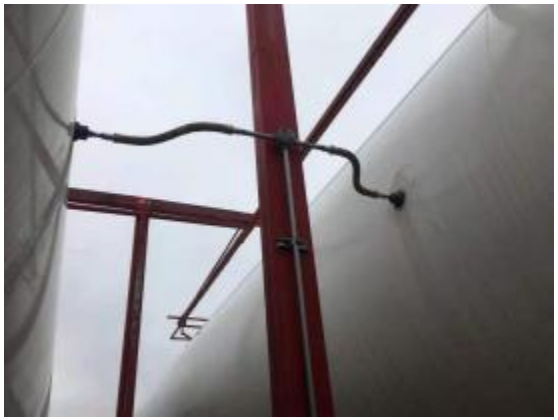
In South Africa, LPG tank, With Insulating Layer



In Kazakhstan, LPG tank



In Mexico, LPG tank



Model Selection

KUM 2601	Non-invasive Ultrasonic Level Gauge

Code	Wire connection method
L	Two-wires
S	Four-wires

Code	Container's shape
Q	spherical
W	horizontal
L	vertical

Code	Container's material
M	Ferromagnetism
O	Non ferromagnetism

Code	Max measure range
3~50	3m、5m、10m、15m、20m、30m、50m

Code	Calibration mode (multi options)
A	Diameter calibration
B	Temperature calibration
N	No calibration

Code	Communication (multi options)
M	Modbus
H	Hart

Code	Alarm
D	Relay alarm output

KUM26	L	Q	M	3	A	H	D

Non-invasive Level Switch

KUM 2603	Non-intrusive Level Switch

Code	Connection Type
D	One Probe
S	Two Probes

Code	Liquid temperature
H	High Temperature
X	Normal Temperature

Code	Container's shape
Q	spherical
W	horizontal
L	vertical

Code	Container's material
M	Ferromagnetism
O	Non ferromagnetism

Code	Points
1	One point
2	Two Points

Code	Communication (multi options)
M	Modbus
R	Infrared

KUM 2603	D	X	Q	M	1	R